WHAT IS CLAIMED IS:

1. An ultraviolet (UV)-curable polyol comprising a reaction product of:
about 30 wt. % to about 70 wt. % of a hydroxy functional compound having a functionality of about 2 to about 3;
about 1 wt. % to about 10 wt. % of an unsaturated carboxylic acid or anhydride; and
about 20 wt. % to about 69 wt. % of an alkylene oxide, such that the sum of the percentages totals 100,
wherein the reaction producing the ultraviolet (UV)-curable polyol occurs in the presence of a double metal cyanide (DMC) catalyst.

2. The ultraviolet (UV)-curable polyol according to Claim 1, wherein the hydroxy functional compound comprises about 30 wt. % to about 60 wt. % of the polyol.

3. The ultraviolet (UV)-curable polyol according to Claim 1, wherein the hydroxy functional compound comprises about 40 wt. % to about 60 wt. % of the polyol.

4. The ultraviolet (UV)-curable polyol according to Claim 1, wherein the hydroxy functional compound is chosen from polypropylene oxide, polyethylene oxide, polybutylene oxide, copolymers of propylene oxide and ethylene oxide, copolymers of propylene oxide and butylene oxide, copolymers of butylene oxide and ethylene oxide, and mixtures thereof.

5. The ultraviolet (UV)-curable polyol according to Claim 1, wherein the unsaturated carboxylic acid or anhydride comprises about 1 wt. % to about 5 wt. % of the polyol.

6. The ultraviolet (UV)-curable polyol according to Claim 1, wherein the unsaturated carboxylic acid or anhydride comprises about 2 wt. % to about 5 wt. % of the polyol.

7. The ultraviolet (UV)-curable polyol according to Claim 1, wherein the unsaturated carboxylic acid or anhydride is chosen from cis-1,2,3,6-tetrahydrophthalic acid, cis-1,2,3,6-tetrahydrophthalic anhydride, maleic acid, maleic anhydride and mixtures thereof.

8. The ultraviolet (UV)-curable polyol according to Claim 1, wherein the alkylene oxide comprises about 20 wt. % to about 50 wt. % of the polyol.

9. The ultraviolet (UV)-curable polyol according to Claim 1, wherein the alkylene oxide comprises about 25 wt. % to about 50 wt. % of the polyol.

10. The ultraviolet (UV)-curable polyol according to Claim 1, wherein the alkylene oxide is chosen from propylene oxide, ethylene oxide, butylene oxide and mixtures thereof.

11. In a process of making one of a scientific glove and a medical exam glove, the improvement comprising including the ultraviolet (UV)-curable polyol according to Claim 1.

12. A process of making an ultraviolet (UV)-curable polyol comprising reacting:

about 30 wt. % to about 70 wt. % of a hydroxy functional compound having a functionality of about 2 to about 3;

about 1 wt. % to about 10 wt. % of an unsaturated carboxylic acid or anhydride; and

about 20 wt. % to about 69 wt. % of an alkylene oxide, such that the sum of the percentages totals 100,

in the presence of a double metal cyanide (DMC) catalyst.

13. The process according to Claim 12, wherein the hydroxy functional compound comprises about 30 wt. % to about 60 wt. % of the polyol.

14. The process according to Claim 12, wherein the hydroxy functional compound comprises about 40 wt. % to about 60 wt. % of the polyol.

15. The process according to Claim 12, wherein the hydroxy functional compound is chosen from polypropylene oxide, polyethylene oxide, polybutylene oxide, copolymers of propylene oxide and ethylene oxide, copolymers of propylene oxide and butylene oxide, copolymers of butylene oxide and ethylene oxide, and mixtures thereof.

16. The process according to Claim 12, wherein the unsaturated carboxylic acid or anhydride comprises about 1 wt. % to about 5 wt. % of the polyol.

17. The process according to Claim 12, wherein the unsaturated carboxylic acid or anhydride comprises about 2 wt. % to about 5 wt. % of the polyol.

18. The process according to Claim 12, wherein the unsaturated carboxylic acid or anhydride is chosen from cis-1,2,3,6-tetrahydrophthalic acid, cis-1,2,3,6-tetrahydrophthalic anhydride, maleic acid, maleic anhydride and mixtures thereof.

19. The process according to Claim 12, wherein the alkylene oxide comprises about 20 wt. % to about 50 wt. % of the polyol.

20. The process according to Claim 12, wherein the alkylene oxide comprises about 25 wt. % to about 50 wt. % of the polyol.

21. The process according to Claim 12, wherein the alkylene oxide is chosen from propylene oxide, ethylene oxide, butylene oxide and mixtures thereof.

22. In a process of making one of a scientific glove and a medical exam glove, the improvement comprising including the ultraviolet (UV)-curable polyol made by the process according to Claim 12.

23. An ultraviolet (UV)-curable polyol comprising the reaction product of:

about 30 wt. % to about 70 wt. % of a polyoxypropylene diol having a functionality of about 2 to about 3;

about 1 wt. % to about 10 wt. % of cis-1,2,3,6-tetrahydrophthalic anhydride; and

about 20 wt. % to about 69 wt. % of propylene oxide, such that the sum of the percentages totals 100,

wherein the reaction producing the ultraviolet (UV)-curable polyol occurs in the presence of a double metal cyanide (DMC) catalyst.

24. In a process of making one of a scientific glove and a medical exam glove, the improvement comprising including the ultraviolet (UV)-curable polyol according to Claim 23.

25. A process of making an ultraviolet (UV)-curable polyol comprising reacting:

about 30 wt. % to about 70 wt. % of a polyoxypropylene diol having a functionality of about 2 to about 3;

about 1 wt. % to about 10 wt. % of cis-1,2,3,6-tetrahydrophthalic anhydride; and

about 20 wt. % to about 69 wt. % of propylene oxide, such that the sum of the percentages totals 100,

in the presence of a double metal cyanide (DMC) catalyst.

26. In a process of making one of a scientific glove and a medical exam glove, the improvement comprising including the ultraviolet (UV)-curable polyol made by the process according to Claim 25.

27. An isocyanate-terminated prepolymer comprising the reaction product of:

an ultraviolet (UV)-curable polyol comprising the reaction product of

about 30 wt. % to about 70 wt. % of a hydroxy functional compound having a functionality of about 2 to about 3,

about 1 wt. % to about 10 wt. % of an unsaturated carboxylic acid or anhydride, and

about 20 wt. % to about 69 wt. % of an alkylene oxide, such that the sum of the percentages totals 100,

wherein the reaction producing the ultraviolet (UV)-curable polyol occurs in the presence of a double metal cyanide (DMC) catalyst; and

a stoichiometric excess of at least one isocyanate.

28. The isocyanate-terminated prepolymer according to Claim 27, wherein the hydroxy functional compound comprises about 30 wt. % to about 60 wt. % of the ultraviolet (UV)-curable polyol.

29. The isocyanate-terminated prepolymer according to Claim 27, wherein the hydroxy functional compound comprises about 40 wt. % to about 60 wt. % of the ultraviolet (UV)-curable polyol.

30. The isocyanate-terminated prepolymer according to Claim 27, wherein the hydroxy functional compound is chosen from polypropylene oxide, polyethylene oxide, polybutylene oxide, copolymers of propylene oxide and ethylene oxide, copolymers of propylene oxide and butylene oxide, copolymers of butylene oxide and ethylene oxide, and mixtures thereof.

31. The isocyanate-terminated prepolymer according to Claim 27, wherein the unsaturated carboxylic acid or anhydride comprises about 1 wt. % to about 5 wt. % of the ultraviolet (UV)-curable polyol.

32. The isocyanate-terminated prepolymer according to Claim 27, wherein the unsaturated carboxylic acid or anhydride comprises about 2 wt. % to about 5 wt. % of the ultraviolet (UV)-curable polyol.

33. The isocyanate-terminated prepolymer according to Claim 27, wherein the unsaturated carboxylic acid or anhydride is chosen from cis-1,2,3,6-tetrahydrophthalic acid, cis-1,2,3,6-tetrahydrophthalic anhydride, maleic acid, maleic anhydride and mixtures thereof.

34. The isocyanate-terminated prepolymer according to Claim 27, wherein the alkylene oxide comprises about 20 wt. % to about 50 wt. % of the ultraviolet (UV)-curable polyol.

35. The isocyanate-terminated prepolymer according to Claim 27, wherein the alkylene oxide comprises about 25 wt. % to about 50 wt. % of the ultraviolet (UV)-curable polyol.

36. The isocyanate-terminated prepolymer according to Claim 27, wherein the alkylene oxide is chosen from propylene oxide, ethylene oxide, butylene oxide and mixtures thereof.

37. The isocyanate-terminated prepolymer according to Claim 27, wherein the at least one isocyanate is chosen from 1,2-ethylene diisocyanate, 1,3-propylene diisocyanate, 1,4-butylene diisocyanate, 1,6-hexylene diisocyanate, 1,8-octylene diisocyanate, 1,5-diisocyanato-2,2,4-trimethylpentane, 3-oxo-1,5-pentane diisocyanate, isophorone diisocyanate, the cyclohexane diisocyanates, hydrogenated tetramethylxylylene diisocyanate, hydrogenated toluene diisocyanates, hydrogenated methylene diphenylene diisocyanates, toluene diisocyanates, methylene diphenylene diisocyanates and polymethylene polyphenylene polyisocyanates.

38. The isocyanate-terminated prepolymer according to Claim 27, wherein the at least one isocyanate is 2',4-toluene diisocyanate (2',4-TDI).

39. The isocyanate-terminated prepolymer according to Claim 27 further including at least one of a photo-initiator and a cross-linking agent.

40. The isocyanate-terminated prepolymer according to Claim 39, wherein the photo-initiator is chosen from alpha-hydroxyalkylphenylketones, benzoin alkyl ethers and benzil ketals, monoacylphosphine oxides and bisacylphosphine oxides.

41. The isocyanate-terminated prepolymer according to Claim 39, wherein the cross-linking agent is chosen from divinylbenzene, propylene glycol di acrylate, propylene glycol di methacrylate, trimethylolpropane triacrylate and mixtures thereof.

42. In a process of making one of a scientific glove and a medical exam glove, the improvement comprising including the isocyanate-terminated prepolymer according to Claim 27.

43. A process of making an isocyanate-terminated prepolymer comprising reacting:

an ultraviolet (UV)-curable polyol comprising the reaction product of

about 30 wt. % to about 70 wt. % of a hydroxy functional compound having a functionality of about 2 to about 3,

about 1 wt. % to about 10 wt. % of an unsaturated carboxylic acid or anhydride, and

about 20 wt. % to about 69 wt. % of an alkylene oxide, such that the sum of the percentages totals 100,

wherein the reaction producing the ultraviolet (UV)-curable polyol occurs in the presence of a double metal cyanide (DMC) catalyst; and

a stoichiometric excess of at least one isocyanate.

44. The process according to Claim 43, wherein the hydroxy functional compound comprises about 30 wt. % to about 60 wt. % of the ultraviolet (UV)-curable polyol.

45. The process according to Claim 43, wherein the hydroxy functional compound comprises about 40 wt. % to about 60 wt. % of the ultraviolet (UV)-curable polyol.

46. The process according to Claim 43, wherein the hydroxy functional compound is chosen from polypropylene oxide, polyethylene oxide, polybutylene oxide, copolymers of propylene oxide and ethylene oxide, copolymers of propylene oxide and butylene oxide, copolymers of butylene oxide and ethylene oxide, and mixtures thereof.

47. The process according to Claim 43, wherein the unsaturated carboxylic acid or anhydride comprises about 1 wt. % to about 5 wt. % of the ultraviolet (UV)-curable polyol.

48. The process according to Claim 43, wherein the unsaturated carboxylic acid or anhydride comprises about 2 wt. % to about 5 wt. % of the ultraviolet (UV)-curable polyol.

49. The process according to Claim 43, wherein the unsaturated carboxylic acid or anhydride is chosen from cis-1,2,3,6-tetrahydrophthalic acid, cis-1,2,3,6-tetrahydrophthalic anhydride, maleic acid, maleic anhydride and mixtures thereof.

50. The process according to Claim 43, wherein the alkylene oxide comprises about 20 wt. % to about 50 wt. % of the ultraviolet (UV)-curable polyol.

51. The process according to Claim 43, wherein the alkylene oxide comprises about 25 wt. % to about 50 wt. % of the ultraviolet (UV)-curable polyol.

52. The process according to Claim 43, wherein the alkylene oxide is chosen from propylene oxide, ethylene oxide, butylene oxide, and mixtures thereof.

53. The process according to Claim 43, wherein the at least one isocyanate is chosen from 1,2-ethylene diisocyanate, 1,3-propylene diisocyanate, 1,4-butylene diisocyanate, 1,6-hexylene diisocyanate, 1,8-octylene diisocyanate, 1,5-diisocyanato-2,2,4-trimethylpentane, 3-oxo-1,5-pentane diisocyanate, isophorone diisocyanate, cyclohexane

diisocyanates, hydrogenated tetramethylxylylene diisocyanate, hydrogenated toluene diisocyanates, hydrogenated methylene diphenylene diisocyanates, toluene diisocyanates, methylene diphenylene diisocyanates and polymethylene polyphenylene polyisocyanates.

54. The process according to Claim 43, wherein the at least one isocyanate is 2',4-toluene diisocyanate (2',4-TDI).

55. The process according to Claim 43, wherein the isocyanate-terminated prepolymer further includes at least one of a photo-initiator and a cross-linking agent.

56. The process according to Claim 55, wherein the photo-initiator is chosen from alpha-hydroxyalkylphenylketones, benzoin alkyl ethers and benzil ketals, monoacylphosphine oxides and bisacylphosphine oxides.

57. The process according to Claim 55, wherein the cross-linking agent is chosen from divinylbenzene, propylene glycol di acrylate, propylene glycol di methacrylate, trimethylolpropane triacrylate and mixtures thereof.

58. In a process of making one of a scientific glove and a medical exam glove, the improvement comprising including the isocyanate-terminated prepolymer made by the process according to Claim 43.

59. An isocyanate-terminated prepolymer comprising the reaction product of:

an ultraviolet (UV) -curable polyol comprising the reaction product of

about 30 wt. % to about 70 wt. % of a polyoxypropylene diol having a functionality of about 2 to about 3;

about 1 wt. % to about 10 wt. % of cis-1,2,3,6-tetrahydrophthalic anhydride; and

about 20 wt. % to about 69 wt. % of propylene oxide, such that the sum of the percentages totals 100,

wherein the reaction producing the ultraviolet (UV)-curable polyol occurs in the presence of a double metal cyanide (DMC) catalyst; and

a stoichiometric excess of at least one isocyanate.

60. In a process of making one of a scientific glove and a medical exam glove, the improvement comprising including the isocyanate-terminated prepolymer according to Claim 59.

61. A process of making an isocyanate-terminated prepolymer comprising reacting:

an ultraviolet (UV) -curable polyol comprising the reaction product of

about 30 wt. % to about 70 wt. % of a polyoxypropylene diol having a functionality of about 2 to about 3;

about 1 wt. % to about 10 wt. % of cis-1,2,3,6-tetrahydrophthalic anhydride; and

about 20 wt. % to about 69 wt. % of propylene oxide, such that the sum of the percentages totals 100,

wherein the reaction producing the ultraviolet (UV)-curable polyol occurs in the presence of a double metal cyanide (DMC) catalyst; and

a stoichiometric excess of at least one isocyanate.

62. In a process of making one of a scientific glove and a medical exam glove, the improvement comprising including the isocyanate-terminated prepolymer made by the process according to Claim 61.